



Recommendation No. 49

November 18, 1997

Dispositioning of Excess and Surplus Facilities at SRS

Background

Decommissioning of nuclear facilities at SRS has occurred. For instance, Building 232-F (the original tritium facility), the test reactor in 305-M, high level waste Tank 20 and the planned work at the Heavy Water Components Test Reactor in B-Area are examples of decommissioning activity. Actual decommissioning is the last of a three step process of disposition (closure). The first two steps are deactivation and then transition (long-term maintenance and surveillance). DOE does not have a disposition (closure) plan which includes all SRS excess and surplus facilities listed in order of priority.

If one just considers the reactors on SRS it is necessary to recognize that there were 10 reactors. Five were the production reactors in C, K, L, P and R areas. These are shut down and awaiting decommissioning plans and actions. One of the other five was the Heavy Water Components Test Reactor in what is now known as B-Area. It is in the process of decommissioning. The other four were in the A/M area fairly near the site boundary. The test reactor in the 305-M Building was decommissioned and removed in the 1980's. The three Savannah River Technology Center experimental reactors remain in building 777-10A which is now used for television studios. This building was the experimental physics building from 1953 to about 1980. These experimental facilities were essential to the design and safe operation of the SRS production reactors. With the advent of increased computer capability by the late 1970's, it became possible (and less expensive) to calculate the effects of changes in fuel/target design and lattice design and the experimental facilities were no longer needed. These three experimental reactors have been deactivated and are in the transition stage.

The Standard Pile (SP) reactor is a five-foot cube graphite reactor used as a neutron source for subcritical experiments to test reactor lattice designs. It was the first reactor to start at SRS and operated from September 1952 until about 1980. It operated at power levels of 50 to 500 watts and occasionally up to 8 kilowatts. It is no longer usable, and it is not possible to obtain fuel for this reactor. It is probably slightly radioactive and could

be removed as a unit and placed in E-Area. There are other experimental facilities in the same room which could be removed (the Subcritical Experiment and the Pressurized Subcritical Experiment). The associated steel could be utilized as scrap. Removal of these facilities would free up space in a vault-like room.

The Process Development Pile (PDP) is a full size physics mock up of the SRS production reactors (roughly a 15 foot high and 15 foot diameter cylinder). It was used from 1953 until the late 1970's. It ran at power levels of 50 to 500 watts with less than 1% innage. The heavy water used as moderator was extremely clean as is the whole system. From a radioactivity standpoint this facility should be very clean. The stainless steel and aluminum should be reusable. Removal would free up space in several large air conditioned/heated rooms.

The Lattice Test Reactor (LTR) was built to test resonance operation of production reactors to increase productivity of certain nuclear materials. Its size is roughly 10 by 10 by 15 feet. It is in the same room with the Process Development Pile and shares many of the PDP control and instrument facilities. The LTR should also be very radioactively clean.

Recommendation

The SRS Citizens Advisory Board recommends that DOE:

1. Prepare a strategic plan for disposition (closure) of SRS excess and surplus facilities.
2. Provide a description of the prioritization process, a risk ranking, and a prioritization list of SRS facilities to be dispositioned (closed) to the SRS Citizen's Advisory Board by January 27, 1998, and a final list and Strategic Plan by May 19, 1998 and an annual update thereafter. The prioritization list should list facilities in decreasing order of relative risk.
3. Decommission the three reactors in Building 777-10A based on their relative priority.

Decommissioning these three reactors would:

- Reduce the number of SRS reactors from the original 10 to the 5 production reactors.
- Remove the last of the reactors from the administrative area.
- Remove any lingering risk associated with these facilities.
- Provide an opportunity for positive public relations.
- Free up space in 777-10A for other uses.
- Provide steel, aluminum and other items for reuse.
- Provide opportunities to develop decommissioning procedures to use on larger, more contaminated facilities.

Agency Responses

[Department of Energy-SR](#)

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